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1 SHEET

## COMPLETE SPECIFICATION

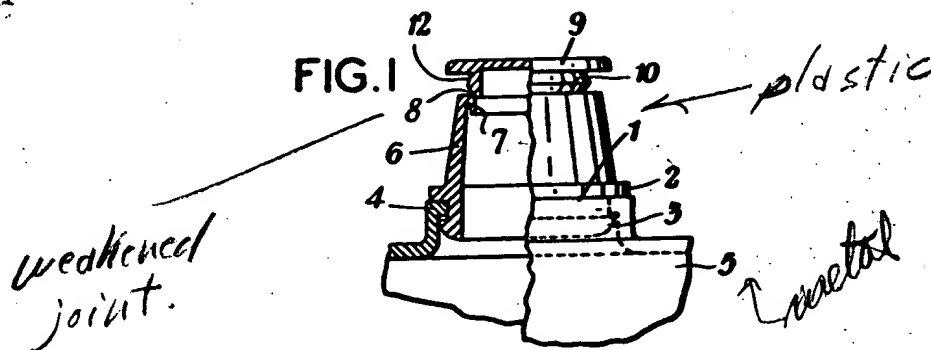
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FIG. 2

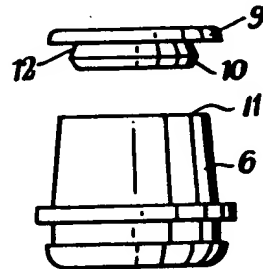


FIG. 3

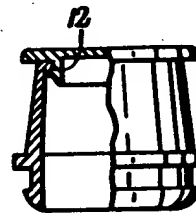


FIG. 4

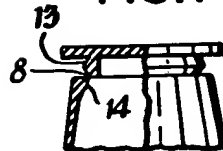


FIG. 5

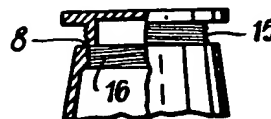


FIG. 6

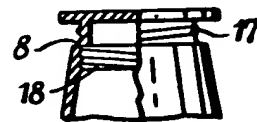


FIG. 7

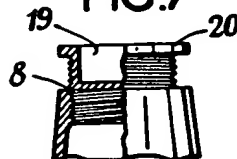


FIG. 8

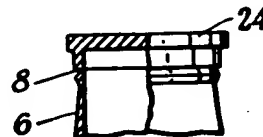


FIG. 9



FIG. 10

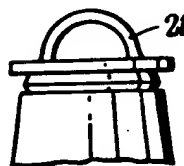


FIG. 11



FIG. 12



215/378

935.117



# PATENT SPECIFICATION

DRAWINGS ATTACHED

935.117

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## COMPLETE SPECIFICATION

### Improvements in or relating to closure means for Receptacles

We, LE BOUCHAGE MECANIQUE, a Body Corporate organised under the laws of the French Republic, of 6 Rue Cambaceres, Paris 8e, France, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

The present invention relates to closure means for receptacles.

It is known to provide a receptacle with a dispensing bung the top of which must be perforated or the upper part of which must be cut to form a dispensing orifice. Often these bungs are supplied with a cap which can be fitted over the orifice so that the contents remaining in the receptacle after the desired quantity thereof has been dispensed is protected from the outside atmosphere. This type of dispensing bung has the disadvantage that it necessitates the use of a knife or similar instrument to make the dispensing orifice. Moreover it is quite expensive to manufacture, largely because it comprises two parts.

It is an object of the present invention to provide closure means for a receptacle in which the disadvantages referred to above are materially reduced.

According to the present invention closure means for a receptacle comprises a neck portion having an opening normally closed by an obturator integrally connected thereto by a weakened zone capable of being readily ruptured to enable detachment of the obturator from the neck portion, the obturator and the neck portion having inter-engageable formations by means of which the obturator may be re-engaged with the neck portion to close the opening therein.

Some embodiments of closure means according to the invention will now be described by way of example, reference being made to the accompanying drawings in which:—

Fig. 1 is a part-sectional view of closure means according to the invention located in an opening of a receptacle,

Fig. 2 is an elevational view of the means of Fig. 1 with the two parts thereof separated,

Fig. 3 is a part-sectional view showing the two parts of Fig. 2 re-engaged with each other.

Figs. 4 to 9 are fragmentary part-sectional views of modified forms of the means according to the invention, and

Figs. 10 to 12 are fragmentary views of means according to the invention showing further modifications.

The closure means is formed of resilient material, for example, polyvinyl chloride and comprises a neck portion 6 open at one end and closed at the other by an obturator consisting of a plug 9, 10. The neck portion 6 is formed with shoulders 2, 3 which define therebetween a waist 1 which can be engaged in an aperture 4 of a receptacle 5, for example, of metal. The diameter of the waist 1 is slightly greater than that of the aperture 4 so that the waist 1 is held under compression by the boundary walls of the latter thereby ensuring a tight seal. To assist in inserting the waist 1 in the aperture 4, the shoulder 3 is chamfered.

The closed end of the neck portion 6 is formed with an inwardly turned lip 7.

The plug 9, 10 comprises a top 9 and a stem 10 which are moulded integrally with the neck portion 6, the plug 9, 10 and the neck portion 6 being joined together by a membrane 8 constituting a weakened zone. The stem 10 is formed with a central portion 12 which is of greater diameter than the remainder and which is also of slightly greater diameter than the internal diameter of the lip 7. The portion 12 may be conical.

Fig. 2 shows the plug 9, 10 detached from the neck portion 6. This may be achieved by pulling the plug 9, 10 away from the neck portion 6 until the membrane 8 is ruptured

[Price 4s. 6d.]

or by sharply depressing the plug 9, 10 into the neck portion 6 (as shown in Fig. 3) to rupture the membrane 8 and then pulling the plug 9, 10 away from the neck portion 6. With either method an orifice 11 is formed through which the contents of the receptacle can be dispensed. The orifice 11 can subsequently be resealed by placing the stem 10 of the plug 9, 10 therein and pressing the former until the portion 12 engages tightly against the lip 7. As can be seen from Fig. 3, the elastic deformation of the lip 7 ensures that a good seal is obtained.

Figs. 4 to 6 show different formations that may be provided on the surfaces of the plug 9, 10 and the neck portion 6 to contact each other and reseat the orifice 11.

In Fig. 4 the stem 10 is provided with a shoulder 13 somewhat similar to the enlarged portion 12 shown in Figs. 1 to 3 but engaging a slightly modified lip 14 on the neck portion 6; in Fig. 5 the stem 10 and neck portion 6 are formed with inter-engaging screw threads 15, 16 respectively and in Fig. 6 the stem 10 is formed with a coarse thread 17 to engage in a corresponding screw thread 18 in the neck portion 6.

Fig. 7 shows a further modification of the closure means in which the plug 9, 10 is formed with a hollow central zone 19 and a lip 20.

In Figs. 8 and 9 the obturator takes the form of a cap 24 which engages over the orifice end of the neck portion 6. The cap may be a snap-on fit as illustrated in Fig. 8 or a screw fit as illustrated in Fig. 9.

Figs. 10 and 11 illustrate devices which may be provided to facilitate the removal of the obturator from the neck portion 6 and rupture of the membrane 8. As shown in Fig. 10 the device is an inverted U-shaped handle 21 secured to the top 9 or, as shown in Fig. 11, the device is a knob 22 secured to one side of the top 9.

Fig. 12 shows a tie member 23 connecting the neck portion 6 to the obturator to minimise the risk of losing the latter after it has been removed from the neck portion 6.

It will be appreciated that the closure means according to the invention may take the form of a dispensing bung for insertion in the orifice of a receptacle or may form an integral part of a receptacle, for example, a receptacle of plastic material, having a closable aperture for filling purposes in its base.

#### WHAT WE CLAIM IS:—

1. Closure means for a receptacle comprising a neck portion having an opening normally closed by an obturator integrally connected thereto by a weakened zone capable of being readily ruptured to enable detach-

ment of the obturator from the neck portion, the obturator and the neck portion having inter-engageable formations by means of which the obturator may be re-engaged with the neck portion to close the opening therein. 65

2. Means according to claim 1, wherein the neck portion is of circular cross-section.

3. Means according to claim 1 or 2, wherein the neck portion is formed integrally with a receptacle. 70

4. Means according to claim 1 or 2, wherein the neck portion is tightly engageable in an aperture in a receptacle to form a neck for the latter. 75

5. Means according to claim 4, wherein the neck portion is formed with two spaced apart annular shoulders at the end remote from the opening to engage the receptacle tightly one on each side of the aperture. 80

6. Means according to claim 5, wherein the shoulder most remote from the opening is chamfered to facilitate location of the neck portion in the aperture.

7. Means according to any one of the preceding claims wherein the obturator comprises a plug engageable within the opening of the neck portion. 85

8. Means according to any one of claims 1 to 6, wherein the obturator comprises a cap engageable over the neck portion to close the opening therein. 90

9. Means according to claim 7 or 8, wherein the weakened zone by which the obturator is integrally connected to the neck portion is such that it can be ruptured by sharply depressing the obturator into, or over, the neck portion. 95

10. Means according to claim 7, 8 or 9, wherein the obturator is so dimensioned as to be a tight press fit on or in the neck portion. 100

11. Means according to any one of claims 7 to 10, wherein an elastically deformable peripherally extending lip is provided on the neck portion to engage with the obturator. 105

12. Means according to any one of claims 7 to 10, wherein the obturator and the neck portion are screw-threaded.

13. Means according to any one of the preceding claims, wherein the obturator is provided with a device to facilitate removal of the obturator from the neck portion and rupture of the weakened zone. 110

14. Means according to any one of the preceding claims wherein a tie is provided to link the obturator to the neck portion. 115

15. Means according to any one of the preceding claims, wherein the neck portion and the obturator are made from a resilient material. 120

16. Closure means for a receptacle substantially as herein described with reference to

Figs. 1 to 12 of the accompanying drawing.  
17. Closure means for a receptacle substantially as herein described.

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